

KRAEMER, E.

"Meeting of the Association of Czechoslovak Mathematicians and Physicists" P. 111
(CESKOSLOVENSKY CASOPIS PRO FYSIKU Vol. 4, No. 1, Feb. 1954 - Praha, Czech.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 4,
April 1955, Uncl.

KRAEMER, Emil

Deskriptivna geometria. Pokusne ucebne texty pre 9. roc. vseob. vzdel. skol. 1. cast.
(Descriptive Geometry. Experimental texts for the 9th grade of schools of general
education. Pt. 1. a textbook Tr. from the Czech. illus., notes) Authors: Emil
Kraemer, Oldrich Lanta, and Antonin Pospisil. Bratislava, SPN, 1957. 55 p.

Bibliograficky katalog, CSR, Slovenske Kihy, Vol. VIII. 1957. No. 9. p. 275.

KRAEMER, Emil

A new mathematical book series. Pokroky mat fyz astr 6
no.1:62-63 '61.

KRAEMER, Emil; SOLER, Kliment.

Scientific institutes for workers' college education affiliated to our higher schools. Poroky mat fyz astr 7 no.1:34-35 '62.

1. Ustav dalkoveho studia Karlovy university, Celetna 20, Praha I (for Kraemer).

KRAEMER, Emil

Frantisek Balada; obituary. Pokroky mat fyz astr 7 no.5:284-285 '62.

KRAEMER, Emil

"Methods of solving mathematical problems" by Jan Vysin.
Reviewed by Emil Kraemer. Pokroky mat fyz astr
8 no.1:40 '63.

KRAEMER, Emil

Tasks of the Advisory Council for Mathematical and Physical
Literature affiliated with the State Pedagogic Publishing House.
Pokroky mat fyz astr 8 no.4:243-245 '63.

KRAEMER, Emil; LINSKY, Milton

Conference on the scientific work of the police of police at the
at the Pedagogic Institute in Moscow (1964) and by
astr 9 no.4:242-249 164.

KR. EMER, J.; HAVELKA, K.

Large synchronous motor to power piston compressors. pt. 2. p. 163.
NOVA TECHNIKA. (Rada vedeckych technickych spolecnosti pri
Ceskoslovenske akademii ved) Praha. Vol. 1, no. 6, June 1956.

SOURCE: East European Accessions List, (EEAL), Library of Congress
Vol. 5, no. 12, December 1956.

KRAEMER, J.

Large synchronous motor for the drive of a piston type compressor.

p. 16 (CHECHOSLOVAK HEAVY INDUSTRY) No. 7, 1956,
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 3,
March 1958

Kraemer, J.

Measuring capacity with a two-system wattmeter in breaking in electric machinery. p. 210. FLEKTROTECHNIK. (Ministerstvo strojirenstvi) Praha. Vol. 11, no. 7, July, 1956.

Source: EEAL LC Vol. 5, No. 10 Oct. 1956

KRAEMER, J.

Measurements and application of absorption curves and the absorption coefficient on synchronous motors. p. 394.
(Elektrotechnický Obzor, Vol. 45, no. 8, August 1956. Czechoslovakia)

SO: Monthly List of East European Accessions. (BEAL) LC. Vol. 6, No. 6,
June 1957. Uncl.

KRAEMER, J. KULDA, V.

Large squirrel-cage motors suitable for direct-on-line starting p.3. (Czechoslovak Heavy Industry, No. 2, 1957) Prague

SO: Monthly List of East European Accession (EEAL) LC, Vol. 6, no. 7 July 1957. Uncl.

KRAEMER, J.

Testing of water turbine-driven vertical alternators. p. 22. (CZECHOSLOVAK
HEAVY INDUSTRY, No. 6, 1957, Prague, Czechoslovakia)

SO: Monthly List of East European Accessions (SEAL) LC, Vol. 6, No. 12, Dec 1957. Uncl.

KRAEMER, J.

"Insulation tests of turboalternators and hydroalternators."

p. 16 (Czechoslovak Heavy Industry) No 12, 1957
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no.4,
April 1958

KRAEMER, J.

Elektrotechnik
Ossor

Vol 46, Nr 12, 1957

Kraemer, J.: Review of the Viewpoints of
the State Institutions of Synchronous
Electric Machines

Review of the Viewpoints of the State Institutions of Synchronous Electric Machines. The paper presents a survey of the most frequently occurring aspects of the state viewpoints of synchronous machines, summarizes the current and prospective problems by which they differ in the development already in their initial stages. Among of the main tasks in their construction, the review of the prospective tasks is supplemented with their current descriptions. The text by means of a high D.C. voltage is filled with technical data, and for the explanation of some phenomena occurring in this case a number of original experiments is given. The article has been written from the viewpoint of manufacturing and assembly practice.

3

KRAEMER, Wilhelm

Kraemer, Wilhelm

Notes on spectral analysis by means of sensitive lines accessible in the field of glass optics: measurements with spark spectra of iron-alloys containing considerable boron and phosphorus.

Z. Anal. Chem., Vol. 97, 1934, pp. 401-5

Chem. Abs., Vol. 28, 5774-9

The alloys studied contained about 20% B or 25% P. Considerable spectroscopic data are given with respect to the characteristic lines that reveal the presence of B, Al, Mg, Ca, Na, Cu, Si, Ti and P. Literature references are also given.

KRAEMER, Yu.

8(6)

SOV/112-59-2-2540

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 2, p 37 (USSR)

AUTHOR: Zikov, S. A., Gusakovskiy, K. B., Kraemer, Yu., Slepnev, L. N.,
and Shtregober, V.

TITLE: Some Problems in Designing Super-Power Turbine Units
(Nekotoryye voprosy proyektirovaniya sverkhmoshchnykh turboagregatov)

PERIODICAL: Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t, 1957,
Nr 9, pp 38-45

ABSTRACT: As a result of calculations made, recommendations are offered for designing the lower-pressure part of high-power turbines; these recommendations allow for the effect of steam pressure in the condenser and for the effect of the end area of the last stages on economical operation of the turbine. The turbine-unit maximum power vs. the heat-power-cycle parameters is presented. The expediency of using several exhausts, 2-tier blades, and 2-shaft turbine units is considered.

M.A.T.

Card 1/1

KRAEV, M.

Influence of a weak magnetic field on the energy spectrum of positronium.
Izv fiz atom BAN 10 no.1:75-82 '62.

1. Fizicheski institut s ANEB pri BAN.

BULGARIA

Major MC D. KRAEV

"Peroral Administration of Co^{60} with Bulgarian Pectin."

Sofia, Voenna Meditsinsko Delo, Vol 18, No 3, Jan 63; pp 41-44.

Abstract : In rats, 2 cc. of 2% apple pectin solution per os 10 min. before administration of 0.1 mC Co^{60} (as nitrate) decreased activity 24 h later in liver to 85%; in kidney to 68.7%, in blood to 72.5%, in muscle to 65.2% of controls whereas pectin 60 min. before or 10 min. after isotope had only insignificant effect. Similar or better results were obtained when Co^{60} was given daily for 10 days each time preceding each dose with pectin. Two tables; 2 Soviet, 2 Bulgarian and 2 Western references.

1/1

RUMANIA

BELOKONSKI, I.; RUSEV, G.; KRAEV, D.; SEICOV, N.; and POPOV, P. "Affiliations not shown", (Peoples Republic of Bulgaria)

"Early Adynamia in the Radiation Sickness"

Bucharest, Revista Sanitara Militara, Vol 16, Special No., 1965; pp 427-437

Abstract: Studies on 500 rats, 2000 mice, 50 dogs: 450, 900, 1800, 5000 r; detail study of muscular weakness following radiation; conditioned reflex response and other central nervous system functions; spontaneous motor activity; muscular response to electrical stimulation, metabolism of potassium, sodium and calcium in the muscles; actomyosin contractility. 13 diagrams.

1/1

- 83 -

KRAEVA, I., inzh.

Modern views on the faster methods for sole tanning. Kozhi
Sofia 4 no.5/6:17-21 '63.

KRAEVA, Iord., inzh.

Different methods in pretanning processing of leather uppers,
and their influence on the quality and output of ready
production. Kozhi Sofia 4 no. 8: 4-6 '63.

1. KNTF.

KHAEVA, Iordanka, inzh.

Ways of the upper leather chrome tanning. Kozhi Sofia 4
no.3:6-9 '63.

KRAEVA, Iordanka, inzh.

Possibilities of accelerating the combined tanning in the
manufacture of stiff leather. Kozhi Sofia 5 no.3:7-9 '64.

KRAF, V.

Aspects of the determination and utilization of the production capacity
in the chemical industry. Rev chimie Min petr 13 no.10:604-609 0 "62.

KRAFFT, Otto

Pyrolytic gasoline improves the octane number of automobile gasolines. Ropa a uhlie 6 no.8:227-229 Ag '64.

1. Research Institute of Coal Chemical Use, Chemické závody
ceskoslovenskosovetského přátelství National Enterprise, Záluží
v Krásných Horách.

KRAFNETER, V.

quality of waste water from electric-power plants. p. 360.

ENERGETIKA. (Ministerstvo energetiky a Ceskoslovenska vadocka technicka spolecnost pro energetiku pri Ceskoslovenska akademii ved) Praha, Czechoslovakia. Vol. 9, no. 7, July 1959.

Monthly list of East European Accessions (EEAI) LC, vol. 9, no. 1, Jan. 1960.

Uncl.

38582

S/081/62/000/010/058/085
B168/B180

11.1105

AUTHORS: Kazarnovskaya, L. I., Kraft, D. P.

TITLE: Determination of concentration and solubility of mineral oils in liquid oxygen

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1968, 401, abstract 10K92 (Tr. Vses. n.-i. in-ta kislородn. mashinostr., no. 2, 1959, 149-158)

TEXT: A visual fluorescent method is described for determining the concentration of oils in liquid oxygen. The oil remaining after evaporating a sample of oxygen is dissolved in dichlorethane, the luminescence of the solution in UV light is compared with that of standard samples. The results agree satisfactorily with determinations by weight. The solubility of lubricating oils in liquid oxygen was found to be ≈ 0.002 mg/l. [Abstracter's note: Complete translation.]

Card 1/1

COUNTRY	:	Romania	H-22
CATEGORY	:		
ABN. SOUR.	:	RZKhiz., No. 22 1959, No.	79745
AUTHOR	:	Blum, I. Bolchi, F., Bercovici, B., and Kraft, E.	
INST.	:	Not given	
TITLE	:	Study of the Gasification of Coke Under the Action of Carbon Dioxide	
ORIG. PUB.	:	Studii si Cercetari Energ, 8, No 2, 245-255 (1958)	
ABSTRACT	:	<p>The authors have investigated the gasification of coke produced from Romanian coals under the action of CO₂. The coke was heated in a metal tube of 80 mm diam in a stream of 99.6% CO₂ at a temperature of 950° and a flow rate of 10 liters per hr. The gasification index was determined according to the formula</p> $R = 100 \cdot CO(CO_2 + 0.5 \cdot CO)$ <p>where R is expressed in terms of the volume of CO</p>	
COND:	2/3	230	

COUNTRY:	:	Romania	11-22
CATEGORY	:		
ABS. JOUR.	:	RZKhim., No. 22 1959 No.	7974
AUTHOR	:		
INCL.	:		
TITLE	:		
CRIC. PUB.	:		
ABSTRACT	:	<p>obtained per volume of CO₂ and CO, and CO are the percentage concentrations of the gases in the product gas mixture. The highest values of the gasification index were recorded for coke samples prepared from Lupen coals and from coals obtained from the Kozia and Sekut beds (R = 164 and R = 156-141 units, respectively). The addition of catalysts to the coke (1-3% of potassium and sodium oxides) increases the gasification index to 129-128 units. Other oxides, e.g., iron ore,</p>	
CPED:		2/3	

COUNTRY	1	Rumania	B-22
CATEGORY	1		
ANNO, NUM.	1	RZKChim., No. 22 1959 No.	7974
AUTHOR	1		
INST.	1		
TITLE	1		
ORIG. PUB.	1		
ABSTRACT	1	<p>SiO₂, Al₂O₃, MnO₂, have a smaller effect on the reduction of CO₂ to CO. The tests have shown the high reactivity of the carbon in the coke towards CO₂, the reactivity attaining the theoretical limits in most cases.</p> <p style="text-align: right;">N. Mirichenko</p>	
DATE	5/5	231	

KRAFT, E.A.

Yugoslavia

"The Steam Turbine in Operation" by E. A. Kraft, Technical University, Zagreb, Yugoslavia

SO: VDI, Zeitschrift, 21 March 1955, Uncl.

KRAFT, F.

"Plzen District Automobile-Motorcycle Club helps to organize drivers' courses." p. 746

SVET MOTORU. Praha, Czechoslovakia, Vol. 9, No. 24, Nov., 1955

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September, 1959
Uncla s

KRAFT F.

BEKÉNY, György, dr.; KRAFT Franciska, dr.

Photogenic epilepsy; intermittent photic stimulation in the EEG.
Orv. hetil. 95 no.39:1053-1060 26 Sept 54.

1. A Budapesti Orvostudományi Egyetem Elme és Idegkörtani Klinika-
jának (igazgató: Nyíró Gyula dr. egyet. tanár) közleménye.
(EPILEPSY

photic, EEG)

(ELECTROENCEPHALOGRAPHY, in various dis.
epilepsy, photic)

BEKÉNY, György; KRAFT, Franciska; LANG, Sándor

Investigations on metabolism in myopathies treated with
methylandrosterone (neosteron). Magyar. belorv. arch. 8 no.4:
101-105 Aug 55.

1. A Budapesti Orvostudományi Egyetem Elme- és Idegkörtani
Klinikájának. (Igazgató: Nyíró, Gyula egyetemi tanár) közleménye.
(MUSCLES, diseases,
ther., methylandrosterone, eff. on metab.)
(ANDROGENS, therapeutic use,
methylandrosterone in musc. dis., eff. on metab.)

BEKENTY, Gyorgy, dr.; KRAFT, Franciska, dr.; LANG, Sandor, dr.

Methylandrostendiol (neosteron) in the treatment of
progressive muscular dystrophy. Orv. hetil. 96 no.8:211-212 20
Feb 55-

1. A Budapesti Orvostudományi Egyetem Elme-es Idegkörtani
Klinikájának (igazgató: Nyíró Gyula dr. Egyetemi tanár)
közleménye.

(PROGRESSIVE MUSCULAR DYSTROPHY, therapy,
methylandrostendiol)

(ANDROGENS, therapeutic use,
methylandrostendiol in progr. musc. dystrophy)

BEKENY, Gyorgy; KRAFT, Franciska; LANG, Sandor

Kethylandr stendiol (neosteron) in the therapy of progressive muscular dystrophy. Orv. hetil. 98 no.29:796-798 21 July 57.

1. A Budapesti Elne- es Idegkortani Klinika (igazgato: Nyiro, Gyula, dr. egyet. tanar) kozlemenye.

(ANDROGENS, ther. use

17a-methyl- $\Delta 5(6)$ -androstene- $3\beta,17\beta$ -diol dipropionate in progressive musc. dystrophy (Hun))

(PROGRESSIVE MUSCULAR DYSTROPHY, ther.

17a-methyl- $\Delta 5(6)$ -androstene- $3\beta,17\beta$ -diol dipropionate (Hun))

BEKENY, Gyorgy, dr.; KRAFT, Franciska, dr.; LANG, Sandor, dr.

Use of durabolin (19-nor-androstenolone phenylpropionate) in
the therapy of progressive muscular dystrophy. Orv.hetil.
101 no.7:229-234 F '60.

1. Budapesti Orvostudományi Egyetem, Neurologiai Klinika.
(MUSCULAR DYSTROPHY ther.)
(TESTOSTERONE rel. cpds.)

BEKENY, Gyorgy, dr.; KRAFT, Franciska, dr.

Ischemic nerve-muscle injury of the lower extremity after muscle strain. Orv. hetil. 103 no.4:167-171 Ja '62.

1. Budapesti Orvostudományi Egyetem, Neurológiai Klinika.

(LEG blood supply) (ISCHEMIA complications)
(PARALYSIS etiology)

TOLKACHEV, A.V., dots.; NAYMUSHIN, I.G., inzh.; KRAFT, G.A.

Operational experience of the TE2 diesel locomotive in passenger traffic. Zhel. dor. transp. 41 no.5:64 M7 '59.

(MIRA 12:7)

1. Zaveduyushchiy dinamometricheskim vagonom Tashkentskogo instituta inzhenerov zheleznodorozhnogo transporta (for Kraft).

(Diesel locomotives) (Railroads—Passenger traffic)

BESKROVNYI, I.G.; VIL'KEVICH, B.I.; KRAFT, G.A.

Diesel locomotives should be equipped with panels and sockets for
rheostatic tests. Elek.1 tepl.tiaga 5 no.4:42 Ap '61.

(MIRA 14:6)

(Diesel locomotives—Testing)

BESKROVNIY, I.G., kand.tekhn.nauk; KRAFT, G.A.; MUKHUTDINOV, G.N., inzh.

Portable fuel meter. Elek. i tepl.tinga 6 no.8:4-5 Ag '62.
(MIRA 17:3)

KRAFT, I.A.

Biliary peritonitis in opisthorchiasis. Med.paraz. i paraz.bol. 25
no.4:291-294 O-D '56. (MLRA 10:1)

1. Iz patologoanatomicheskogo otdeleniya Tobol'skoy bol'nitsy
(glavnyy vrach M.I.Koshkarova)
(TREMATODE INFECTIONS, complications,
opisthorchiasis causing biliary peritonitis (Rus))
(PERITONITIS, etiology and pathogenesis,
biliary, caused by opisthorchiasis (Rus))

KRAFT, I.A. (Tobol'sk, Tyumenskoy oblasti, Gorodskaya bol'nitsa, patologoanatomicheskoye otdeleniye).

Characteristics and frequency of primary liver cancer in Tobolsk.
[with summary in English]. Vop.onk. 4 no.3:321-324 '58 (MIRA 11:8)

1. Iz patologoanatomicheskogo otdeleniya (zav. - dots. I.A. Kraft)
Tobol'skoy gorodskoy bol'nitsy (glavn.vrach - M.I. Koshkarova).
(LIVER NEOPLASMS, statist.
in Russia (Rus))

KRAFT, I.A.

Case of rupture of the hepatic duct with formation of a retroperitoneal biliary fistula in episthorchosis. Med. paraz. 1 paraz. bol. 27 no.4: 449-450 J1-Ag '58. (MIRA 12:2)

1. Iz Patologoanatomicheskogo otdeleniya Tobol'skoy bol'nitsy (glavnyy vrach M.I. Koshkarova).

(TREMATODE INFECTIONS, compl.

episthorchosis with hepatic duct rupt. & retroperitoneal biliary fistula (Rus))

(HEPATIC DUCT, rupture,

in episthorchosis, with retroperitoneal biliary fistula (Rus))

(BILIARY TRACT, fistula,

retroperitoneal in hepatic duct rupt. caused by episthorchosis (Rus))

KRAFT, I.A. (Tobol'sk, Tyumenskoy oblasti, ul. Sverdlova, d.3)

Early liver changes in experimental mouse opisthorchosis. Vop. onk.
no.6:747-750 '59. (MIRA 12:111)

1. Iz patologoanatomicheskogo otdeleniya (zav. - dots. I.A. Kraft)
Tobol'skoy gorodskoy bol'nitsy (glavnyy vrach - zaslužennyy vrach
RSFSR M.I. Koshkarova).

(OPISTHORCHIS, infect.

exper., early liver changes in mice (Rus))

(LIVER, pathol.

early changes in exper. mouse opisthorchosis (Rus))

KRAFT, I.D.

USSR/Chemistry - Aminocarboxylic Acids .

21 Dec 51

"Preparation of Aromatic Aminocarboxylic Acids From Arylisocyanates," N.S. Bokunikhin, L.A. Gayeva, I. D. Kraft

"Dok Ak Nauk SSSR" Vol LXXXI, No 6, pp 1073-1075

Phenylisocyanate is added to a molten soln of NaCl in AlCl₃. An intermediate compd is formed, which after heating in 10% NaOH, yielded anthranilic acid. 1,8-Aminonaphthoic acid was prepd from 1-naphthylisocyanate in a similar way. After heating in HCl, 1,8-aminonaphthoic acid yielded naphthostyryl. 5-Acenaphthylisocyanate did not yield 5,6-aminoacenaphthene carboxylic acid.

215714

KRAFT, J.

POL. J

3549

875.024.2:675.024.027:547.98

Rodziewicz O., Kraft J. Tanning Russia Leather and Sleeked Leather by Means of Liquors with High Rolanin Content.

Garbowanie skór jachtowych i blankowych przy zastosowaniu brzożek o wysokiej zawartości Rolanin. Przegląd Skórzany. No. 12, 1954. (Biol. IPS), pp. 21-24. 1 fig. 4 tabs.

The authors' investigations showed that Polish synthetic tannins -- Rolanins -- are a suitable substitute for imported vegetable tannins for Russia leather and sleeked leather. Rolanin-tanned leathers do not to any appreciable extent differ in physical and chemical properties from vegetable-tanned leather. The finish and colour of the face side of the leather are, with Rolanins, slightly inferior to those obtained with vegetable tannins. Because it has not yet been properly standardized, certain difficulties were met with when using Rolanin P.

KRAFT, J.

KRAFT, J.; RODZIEWICZ, O.

Additional tanning of vegetable tanned leather with formaldehyde. 1. Biuletyn Przem. p. 13.

Vol. 10, no. 8, Aug. 1956

PRZEGŁAD PAPIERNICZY. Lodz.

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, no. 3, March, 1956

POLAND / Chemical Technology, Chemical Products and Their
Application. Leather, Fur, Gelatin. Tanning Materials.
Industrial Proteins:

H-35

Abs Jour : Ref Zhur - Khimiya, No 5, 1959, No. 17980

Author : Rodziowicz, O.; Kraft, J.

Inst : Not given

Title : Finishing Tanning Stop Employing Formaldehyde of the
Partially Tanned Hides with Vegetable Tanning Agents

Orig Pub : Przegl. skorzany, 1957, 12, No 9, Biul. Inst. przem.
skorzan., 13-14

Abstract : Hides tanned with vegetable tanning agents were finished
with CH_2O (I) and were subjected to aging test (Innos'
method) to mildew resistance (*Penicillium glaucum*) and
resistance to sweat (employing artificial perspiration).
The finishing tanning stop with I does not improve
the resistance to aging by Innos' test; it improves

Card 1/2

POLAND / Chemical Technology, Chemical Products and Their
Application. Leather, Fur, Gelatin. Tanning Materials.
Industrial Proteins.

H-35

Abs Jour : Ref Zhur - Khimiya, No 5, 1959, No. 17980

somewhat the resistance to sweat and does not improve the
mildew resistance. When the finishing tanning step is
conducted with I to which quantity of NaCl is added the
resulting properties of leather are improved with respect
to aging and to the resistance to perspiration as compared
to the action of I alone. -- M. Lyuksomburg

Card 2/2

H-170

Kn-P1, Jaroslav

examining the sintering capacity of specimens filled with limestone
in long-time storage. Chem. prum. 14, no.3:393-402, 1964.

1. Severozasaku chemické zavode National Enterprise, Novosibirsk.

FT, J.

COSLOVAKIA/Chemical Technology. Chemical Products and Their
Application. Fertilizers

H-9

Abs Jour : Ref Zhur - Khim., No 24, 1958, No 82277

Author : Kraft J.

Inst :

Title : Liquid Nitrogenous Fertilizers

Orig Pub : Chem. promysl, 1958, 8, No 5, 225-229

Abstract : Based on the results of the conference of the Czechoslovakian nitrogen industry, on the author's investigations, and certain information presented in the technical literature, possibilities of the manufacture of liquid nitrogenous fertilizers in Czechoslovakia are reviewed. Solubilities of crystalline salts in the anhydrous NH_3 , and in concentrated aqueous NH_3 solutions as well as of NH_3 gas in the nitrate solutions of a required concentration are determined. A series of experiments involving the NH_4NO_3 - NH_3 - H_2O system and solubilities therein at different temperatures were con-

Card : 1/2

COSLOVAKIA/Chemical Technology. Chemical Products and Their
Application. Fertilizers

H-9

Abs Jour : Ref Zhur - Khim., No 24, 1958, No 82277

ducted. It was established that at appropriate selection of salt concentration in an ammonia solution it is possible to obtain a complex, the vapor pressure of which does not exceed 1 atm. The determinations of solubility rates demonstrated that under laboratory conditions NH_3 dissolves instantaneously in the solutions of NH_4NO_3 . When NH_4NO_3 crystals are introduced into NH_3 water they dissolve considerably faster than in plain water. Economics and analysis of the manufacture and of application of liquid N- fertilizers is presented. Bibliography of 23 titles - G. Rabinovich.

Card : 2/2

KRAFT, J.

TECHNOLOGY

PERIODICAL: CHEMICKY PRUMYSL. VOL. 11, no. 3, 1958

Kraft, J. A new nitrogenous fertilizer, Lovosice saltpter. p. 505.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 5,
May 1959, Unclass.

KRAFT, Jaroslav

"Production of phosphoric fertilizers" by Jaroslav Schneider and Miroslav Knoll. Reviewed by Jaroslav Kraft. Chem prum 12 no.5:262 My '62.

1. Severoceske chemicke zavody, n.p., Lovosice.

KRAFT, Jaroslav

"Nitric acid technology" by V.I. Atroschenko [Atroshchenko, V.I.]
and S.I. Kargin. Reviewed by Jaroslav Kraft. Chem prum 12 no.11:
624 N '62.

1. Severoceske chemicke zavody, n.p.

KRAFT, Jaroslav

Continuous sampler of loose materials. Chem prum 13 no.9:475
S '63.

1. Severoceske chemicke zavody, n.p., Lovosice.

KRAFT, K.A.

Seasonal variations in the population and daily variations in the
activity of *Musca domestica* L. in Akmolinsk. Med.paraz. i paraz.
bol. 29 no.6:726-730 '60. (MIRA 14:2)
(AKMOLINS--FLIES)

KRAFT, M.

TECHNOLOGY

PERIODICAL: ENERGETICA. Vol. 6, No. 12, Dec. 1958

KRAFT, M. From our experiences in exploiting the deposited at the Diocesi
Thermoelectric Plant. P. 563

Monthly List of East European Accessions (MEA) LC Vol. 2, No. 4
April 1959, Unclass.

KRAFT, M.

Mechanical shovel with distant control. Energetica Rum 9 no.5;
210-212 My '61.

KRAFT, M., ing.; MOTOIU, C., conf. ing.

The Ludus thermal power station. Energetica Rom 12 no. 8:
381-392 Ag '64.

1. Director, Ludus Power Station (for Kraft). 2. Chief
Planner, Institute for Electric Power Study and Planning,
Bucharest (for Motoiu).

KRAFT, M.M. (Lozana)

The tea fungus. Prir i znanie 16 no.2:2-10 F '63.

10

CH

THE ACTION OF ESTERS OF CHLOROSULFONIC ACID ON ALKYL ESTERS OF SULFURIC ACID. BY
 YA. KRAFT AND F. V. LYUTINA. *J. Gen. Chem. (U. S. S. R.)* 1, 110 (1961). The
 method of esterification with ClCO_2Me and ClCO_2Et of acids which are decomposed by
 the water liberated in the common methods of alkylation is investigated with Me-
 HSO_4 and EtHSO_4 . A mixt. of MeHSO₄ and ClCO_2Me (10% excess), refluxed 6-8
 hrs at 100° until the evolution of gases ceased, produced Me₂SO₄ in 100% yield. Under
 similar conditions are obtained: 50% of Me₂SO₄ from ClCO_2Me and EtHSO_4 ,
 40% of Et_2SO_4 from ClCO_2Et and EtHSO_4 , and 40% of Et_2SO_4 from ClCO_2Et and
 MeHSO₄ (instead of the expected MeEtSO₄). (CHAS. BLANC)

ASAC 55.6 DETALLURGICAL LITERATURE CLASSIFICATION

ALPHABETIC INDEX																										NUMERIC INDEX																																			
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	1	2	3	4	5	6	7	8	9	0	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
<p>Analysis of pentaerythrol in solutions. M. YA. KRAVE. <i>J. Chem. Ind. (Moscow)</i> 8, 607 (1931). -Pentaerythrol (I) mixed in solns. with other compds. is detd. with accuracy of 0.25% by shaking BaH with 10 cc. of aq. soln. of I (contg. 0.4 g. of I), 2 cc. of HCl, 0.1-1.0, and 10 cc. of 90% alc., allowing to stand overnight, filtering on a Gooch crucible, washing with H₂O to a neutral reaction, drying at 105-107° to const. wt. and weighing. The formation of the acetal (m. 157°) is thus formulated: $C_5H_{12}O_8 + 2BaH = PhCH(OCH_2)_5C(CH_2O)_5CHPh + 2H_2O$. CHAS. BLANC</p>																																																													
<p>ASAC SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																													

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CA

THE QUESTION OF PRODUCING TETRACHLOROETHANE AND TRICHLOROETHYLENE. M. YA. KRAPI AND B. A. ALEKSEEV. *J. Chem. Ind. (Moscow)* 8, 801 3(1931).--Direct reaction between Cl_2 and C_2H_2 leads to explosions. Fe compds. catalyze the reaction and prevent explosion. However, the catalyst overheats locally and impure products result. It is better to pass the gases into $\text{C}_2\text{H}_2\text{Cl}_2$ soln. contg. 0.01% SbCl_5 . More $\text{C}_2\text{H}_2\text{Cl}_2$ is formed and the excess gases pass upward into a layer of pyrite slag, which prevents explosion. The grains of slag should not be more than 7-15 mm in diam. Gaseous mixts. contg. up to 37% air will not explode under these conditions. By keeping the temp. at 25-35°, quant. yields of $\text{C}_2\text{H}_2\text{Cl}_2$ are obtained.

H. M. LEICHTER

ASB-SL-P METALLURGICAL LITERATURE CLASSIFICATION

Esterification with esters of chloroformic acid. M. YA. KRAFT AND H. A. ALK-SHAY. *J. Gen. Chem.* (U. S. S. R.) 2, 720-9(1932); cf. *C. A.* 26, 2107.—It was shown that the action of chloroformic esters on alkyl sulfates produced large yields of dialkyl sulfates: $\text{MeSO}_3\text{H} + \text{ClCO}_2\text{Me} = \text{Me}_2\text{SO}_4 + \text{HCl} + \text{CO}_2$. The reaction was applied to the prepn. of esters of such acids, which by other methods cannot be esterified, e. g., ClSO_3H , and that of alca. not existing in a free state, such as mono- and trichloromethyl esters of alkylsulfuric and carbonic acids. The esterification of ClSO_3H with ClCO_2Me produced a large yield of ClSO_3Me : $\text{ClSO}_3\text{H} + \text{ClCO}_2\text{Me} = \text{ClSO}_3\text{Me} + \text{HCl} + \text{CO}_2$. $\text{ClCO}_2\text{CH}_2\text{Cl}$ gave with ClSO_3H a good yield of $\text{ClSO}_3\text{CH}_2\text{Cl}$, while in all other cases $\text{ClCO}_2\text{CH}_2\text{Cl}$ resulted in a complex reaction with the formation of the corresponding chloroanhydrides (except with BaOH), the reaction evidently proceeding with a complete decompn. of $\text{ClCO}_2\text{CH}_2\text{Cl}$, e. g., $\text{MeSO}_3\text{H} + \text{ClCO}_2\text{CH}_2\text{Cl} = \text{MeSO}_3\text{Cl} + \text{CH}_2\text{O} + \text{HCl} + \text{CO}_2$. This interpretation is supported by the reaction of $\text{ClCO}_2\text{CH}_2\text{Cl}$ with BaOH giving BaCl and $(\text{BaO})_2\text{CH}_2$, the formation of which from BaCl and paraformaldehyde with ZnCl_2 was formulated thus by Descudé (*Compt. rend.* 132, 1507(1901); 134, 1006(1902)): (1) $\text{BaCl} + \text{CH}_2\text{O} = \text{BaOCH}_2\text{Cl}$, (2) $2\text{BaOCH}_2\text{Cl} = \text{Ba}_2\text{O} + (\text{CH}_2)_2\text{O}$, (3) $\text{Ba}_2\text{O} + \text{CH}_2\text{O} = (\text{BaO})_2\text{CH}_2$. Evidently in the interaction of BaOH and $\text{ClCO}_2\text{CH}_2\text{Cl}$, $(\text{BaO})_2\text{CH}_2$ is formed at the cost of the decompn. of BaOCH_2Cl into BaCl and CH_2O . The action of $\text{ClCO}_2\text{CCl}_3$ on carbonic and alkylsulfuric acids gives the corresponding chloroanhydrides, the reaction proceeding possibly thus: (1) $\text{MeSO}_3\text{H} + \text{ClCO}_2\text{CCl}_3 = \text{MeSO}_3\text{CCl}_3 + \text{HCl} + \text{CO}_2$, and (2) $\text{MeSO}_3\text{CCl}_3 = \text{MeSO}_3\text{Cl} + \text{COCl}_2$. ClCO_2Me was obtained from anhyd. MeOH and COCl_2 , and converted to $\text{ClCO}_2\text{CH}_2\text{Cl}$.

b. 105-9°, and $\text{ClCO}_2\text{CCl}_4$, b. 127-8°, by chlorination in daylight (Hentschel, *Ber.* 18, 1177 (1886); *J. prakt. Chem.*, [2], 34, 100). ClSO_2Me , bp 31°, was obtained in 101 g. (80% yield) by pouring gradually 103 g. (10% excess) ClC_2H_5 into 115 g. ClSO_2H ; when the evolution of HCl and CO_2 ceased, the reaction was completed by careful heating to 100° in a water bath, and then redistg. *in vacuo*. $\text{ClSO}_2\text{CH}_2\text{C}_2\text{H}_5$, b. 41-5°, was prepd. in 80% yield from 60 g. ClSO_2H and 71 g. $\text{ClCO}_2\text{CH}_2\text{Cl}$ as described. Above, the reaction product then being washed with ice water, dried with Na_2SO_4 , and distd. *in vacuo* (Fuchs and Katcher, *C. A.* 22, 382). A yield of 48 g. (78%) ClSO_2Me , bp 31-2°, resulted from 40 g. Me_2SO_4 and 60 g. $\text{ClCO}_2\text{CH}_2\text{Cl}$. A mixt. of 20 g. BrOH and 35 g. $\text{ClCO}_2\text{CH}_2\text{Cl}$ (50% excess), heated 6 hrs. at 108° in an oil bath, and on standing at room temp. (b.p.), ClH , crystals from alc., m. 90-100°, and BaCl_2 . A cold mixt. of 112 g. $\text{ClCO}_2\text{CCl}_4$ and 81 g. MeSO_2H was heated to 65°, the turbulent reaction regulated at 20-5°, the mixt. then heated again 4 hrs. in a boiling water bath, the reaction product washed with ice water and distd. *in vacuo* with anhyd. Na_2SO_4 , producing 42 g. ClSO_2Me . A mixt. of 20 g. BrOH and 40 g. $\text{ClCO}_2\text{CCl}_4$, heated 8 hrs. at 95-105°, produced 17 g. (74%) HCl (Fuchs and Katcher).

KRAFT, M. Ya.

Neutral esters of sulfuric acid and polyatomic alcohols. M. Ya. Kraft (Moscow All Union Chem. Pharm. Res. Inst.), *I. Gen. Chem. (U.S.S.R.)* 16, 677-81 (1946). Neutral esters of H_2SO_4 and polyat. alc. may be prep'd. by the reaction of chlorocarbonate esters on acid H_2SO_4 esters. Most readily preparable and most stable are those esters whose β -C atom does not have a H atom. Prepn. of derivs. of an alc. with a secondary OH (glycerol) failed. Pure $ClSO_3H$ (2.33 g.) was treated with cooling to under -5° with 0.2 g. dry $(CH_3OH)_2$; the resulting oil was treated with 210 g. $ClCO_2Me$ and the mixt. was heated under a reflux condenser on a water bath, with the first 12 hrs. at $50-60^\circ$, then 1 hr. on a steam bath. The mass was poured on ice water and the oily layer was sepd., dried, and distd. to give 85 g. Me_2SO_4 and 10 g. $C_4H_9SO_4$, b. $117-118^\circ$, m. 95.5° (from dil. $EtOH$); the product is apparently $(MeOSO_2OCH_2)_2$. Pentaglycerol (12 g.) and 1.2 g. $MeOH$ was reacted as above with 105 g. $ClSO_3H$, and the mass after standing overnight in the cold was treated with 94 g. $ClCO_2Me$ and cautiously heated to $50-60^\circ$ until HCl evolution ceased (15 hrs.); after heating 1 hr. on a steam bath and cooling, the mass was worked up as above to give 58 g. Me_2SO_4 and 11 g. of an undistillable oil, slowly crystg. on treatment with H_2O , m. 46° (from $EtOH-Et_2O$); the product analyzed

for $C_{11}H_{22}SO_4$ and was apparently $M-C(CH_2SO_3)_2$ (17 g.), when this ester was stirred with $5\% H_2SO_4$ until it dissolved, essentially complete hydrolysis of the Me groups took place, and on neutralization with $BaCO_3$ there was obtained a good yield of the Ba salt of pentaglycerol tetrasulfate, $C_5H_9S_4Ba$. Pentacrythritol (17 g.) was added with stirring and good cooling to 125 g. $ClSO_3H$; after standing overnight the mass was filtered to yield 97.5% of a white, cryst., hygroscopic mass of pentacrythritol tetrasulfate, which readily formed the Ba salt on soln. in water and neutralization with $BaCO_3$, followed by concn. and recrystallization from dil. $EtOH$; the Ba salt, $C_5H_9S_4Ba$, is very sol. in water. The ester (50 g.) was treated with 54 g. $ClCO_2Me$ and slowly heated to 100° and kept there for 15 hrs.; the product crystd. on cooling and was purified by rubbing with $EtOH$ and water (52.5 g., 82%), followed by crystn. from dil. Me_2CO ; $C(CH_2OSO_2OCH_2)_2$, so obtained, m. 110.3° , and was readily hydrolyzable to the starting materials on refluxing 10 hrs.

with dil. alc. H_2SO_4 ; pentacrythritol was estd. in the hydrolysis mixt. by treatment with BzH , which readily formed an essentially insol. dibenzylidene derivate, m. 157° . G. M. Kosolapoff.

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CA

Reaction of salvarsan with sulfurous acid. M. Ya. Kraft and I. A. Batschouk. *Compt. rend. acad. sci. U.R.S.S.* 35, 723-5 (1947) (in French); cf. *C.A.* 42, 5764.

Salvarsan (I) reacts nearly quantitatively with SO_2 to give $\frac{1}{2}$ mole $3,4\text{-H}_2\text{N}(\text{HO})\text{C}_6\text{H}_3\text{AsS}$ (II), which, as the sulfate, is practically insol. in water, and $\frac{1}{2}$ moles $3,4\text{-H}_2\text{N}(\text{HO})\text{C}_6\text{H}_3\text{AsO}$. II with iodine in a faintly acid medium gives $3,4\text{-H}_2\text{N}(\text{HO})\text{C}_6\text{H}_3\text{AsO}_2\text{H}_2$ (III). With $3,4\text{-H}_2\text{N}(\text{HO})\text{C}_6\text{H}_3\text{AsI}_2$, II gives I. The observation of previous experimenters (*C.A.* 6, 1616; 14, 2481) of the presence of an org. compd. contg S and As in the I obtained by the reduction of III with $\text{Na}_2\text{S}_2\text{O}_3$ in which NaHSO_3 forms, is now explained.

W. S. Port

ASB-5LA METALLURGICAL LITERATURE CLASSIFICATION

KRAFT, M. Ya., and BASHUK. I. A.

Mbr., Inst. Pharmacology, Chemical Therapy, and Toxicology, Moscow, -1946-.

"Reaction of Arseno-Compounds with Arsenical Acids and Oxides of Arsenic," Dok. AN, 55, No. 5, 1947

"Reaction of 3,3'-Diamino-4,4'-Dioxyarsenobenzene with Sulfuric Acid," Dok. AN, 55, No. 8, 1947

KRAFT, YA. M.

PA 41/49T5

USSR/Chemistry - Salvarsan
Chemistry - Arsenic Compounds

Apr 49

"Polymeric Arseno-Compounds: The Structure of Salvarsan," M. Ya. Kraft, I. A. Bashchuk, All-Union Sci Res Chemichophar Inst imeni S. Ordzhonikidze, Moscow, 4 pp

"Dok Ak Nauk SSSR" Vol LXV, No 4 p. 509, 1949

Introduces data which casts doubt on the structural formula for salvarsan suggested by P. Ehrlich and A. Bertheim. Many of its chemical properties, especially those exhibited when salvarsan is obtained by different methods (the

41/49T5

USSR/Chemistry - Salvarsan (Contd)

Apr 49

colloidal characteristics are expressed in varying degrees) indicate a polymeric structure for the compound. Derives a formula for degree of polymerization when salvarsan is obtained by four different methods. Submitted by Acad A. N. Nesmeyanov, 29 Dec 48.

41/49T5

PA 52/49T50

USSR/Medicine - Arsenic and Arsenic Compounds May 49

Medicine - Drugs

"Polymeric Arseno Compounds," M. Ya. Kraft, V. V. Katsyukhin, All-Union Sci Res Chemocophar Inst Invent S. Ordzhonikidze, 3 pp

"Dok Ak Nauk SSSR" Vol LXVI, No 3 p 207, 1949

It has been previously shown by determining molecular weight of certain forms of salvarsan that it is a polymeric compound. Mixtures of arseno compounds are not explained by the old viewpoint. Obtaining such compounds is a corroboration of their

52/49T50

USSR/Medicine - Arsenic and Arsenic Compounds (Contd) May 49

polymeric structure. Submitted by Acad A. N. Kiselev, 14 Mar 49.

KRAFT, M. YA.

52/49T50

KRAFT, M. Ya. and PARINI, V. P.

"The Nature of Red Phosphorus," Dokl. AN SSSR, 77, No.1, pp 57-60, 1951

Translation MIH

KRAFT, M. Ya.

Oct 52

USSR/Chemistry - Phosphorus Organic Compounds

"Concerning the Reaction for Preparing Chlorides of Aromatic Esters of Phosphoric Acid. A New Type of Cationic Catalysis," M. Ya. Kraft, V.V. Katyshkina; All-Union Sci Res Chemicopharmaceutical Inst im S. Orkzhonikidze

DAN SSSR, Vol 86, No 4, pp 725-728, 1962

In Studying the reaction between phenols and POCl_3 , it was noticed that in some expts the reaction would not give satisfactory results but in others the reaction proceeded at a satisfactory speed. It was found that acceleration was due to impurities in the starting materials, namely, the presence of cationic catalysts, such as Na, extracted from the glass of the reaction vessel. Using NaCl catalyst, chlorides of the following esters were prepd: m-nitrophenol ester of phosphoric acid, p-nitrophenol ester of phosphoric acid, 2,4-dinitrophenol ester of phosphoric

(over)

KRAFT, M. Ya.

The nature of some modifications of red phosphorus. 1. Products of polymerization of white phosphorus in the medium of organic halogen derivatives. M. Ya. Kraft and V. P. Paryk (S. Oryshonikides, All-Union Chem. Pharm. Inst., Moscow). *Sovetsk. State. Khim. Akad. Nauk S.S.S.R.* 1, 716-23 (1953); cf. Kraft, *ibid.*, C.A. 45, 2860d. — Photopolymerization of white P in org. halides yields insol. substances which contain, besides P, some C and halogen; these substances are not the products of scorption nor solid solns. but are polymers of P which contain halogen atoms and org. radicals as terminal groups

of the polymer structures. [For photoresistions of P in org. liquids, cf. Pedler, *Trans. Chem. Soc.* 57, 599 (1900); Colson, *Compt. rend.* 140, 401 (1905); C.A. 2, 1395; Lotterwasser, C.A. 3, 392; Michaelis and Arendt, *Ann.* 314, 250 (1901); 325, 361 (1902); Rozen, C.A. 31, 1710f. Dry solns. of white P satd. at 20° in MeI, EtI, BuI, iso-AmI, PhI, BuBr, PhBr, and PhCl in sealed amples in CO₂ atm. were irradiated at 60-80° with a Hg-lamp radiation for 15-180 hrs. No pressure developed in the tubes. Solns. in PhCl and RBr gave small amts. of ppt., and most work was done on the more productive solns. of RI type. The products in these cases were powders (violet from MeI, orange from larger halides) which contained about 80% P, 5-17% iodine, 1-7% C. All oxidized slowly on contact with air and oxidized vigorously on contact with 5N HNO₃, liberating iodine and N oxides. None were sol. in org. solvents. Prolonged contact with H₂O liberated the halogen in ionic form, but the C content remained unaffected; as the halogen was removed the products turned lighter in color. Oxidation with HNO₃ yielded RPOH₂, where R is the radical of the org. halide used as the solvent; small amts. of org. deriva. which were probably RPOH₂ were

obtained, but in amts. which did not permit identification. In a typical expt. 177 g. PhI was shaken in the dark with 12.4 g. white P for 3 days, the insolubles filtered off (3.7 g.) and the sealed ampul under CO₂ was exposed to illumination for 20 days at 60-80°, yielding 6 g. orange powder, which when boiled 1.5 hrs. with H₂O lost all iodine content, and retained 8.78% C; to 4.4 g. dried product was added a little H₂O, followed by 20 vols. 5N HNO₃; the resulting soln. evapd. on a steam bath, heated briefly with 1 ml. fuming HNO₃, repeatedly evapd. with H₂O to remove HNO₃, the residue neutralized at 100° with dry Na₂CO₃ (until CO₂ evolution stopped) ground to a powder and extd. with hot 95% EtOH; evapd. of the ext. gave a residue of crude phosphonic acid which was taken up in H₂O and treated with Pb(OAc)₂, yielding Pb diisopropylphosphonate, C₆H₅O₂NPPb (I), 0.5 g. The filtrate was treated with H₂SO₄ to remove excess Pb, the filtrate was repeatedly evapd. with H₂O to remove AcOH and the residue was satd. with Na₂CO₃, evapd. to dryness, dried at 150-70° and extd. with hot 95% EtOH; the concd. ext. treated with alc. AgNO₃ gave only a trace of cloudiness indicating a small amt. of a phosphinic acid. I (0.4 g.) taken up in 20 ml. boiling 70% AcOH was dissd. with 3 parts H₂O and treated with H₂S, filtered, the filtrate evapd. several times to remove AcOH, evapd. to dryness, yielded 0.3 g. brownish solid, which gave m-O₂NC₆H₄PO(OH)₂, m. 133-3° (from C₆H₅Et₂O). The reaction product from 230 g. iso-AmI and 7.4 g. P amounted to 8 g. (after 30 hrs. irradiation) and on treatment described above gave 4.5% (based on the wt. of polymer obtained) Ph diisopropylphosphonate, which gave the free acid, m. 138°. The following yields of PhO₂PR (based on wt. of polymer obtained) are reported (R given): Me, 0.9%; Et, 4.1%; Bu, 4.8%; m-O₂NC₆H₄.

KRAFT, M. Ya. ; Patini, V. P

"Concerning the Nature of Certain Modification of Red Phosphorus. 2. Halogen-Containing Forms of Red Phosphorus"

Sb. Statey po Obshchey Khimii. Izd-vo AN SSSR, M. -L., Vol 1, 1953, 723-729

Investigated the modifications of phosphorus containing bromine and iodine (I) as prepared by the polymerization of white phosphorus (II). The Br₂-containing (I) was prepared by boiling (II) in PBr₃, and the iodine-containing (I) was prepared by photopolymerization of a solution of (II) in PBr₃ in the presence of iodine. When the iodine-containing forms of (I) were reacted with methyl magnesium iodide, phenyl magnesium bromide, and diethyl zinc, a partial exchange of iodine atoms with organic radicals was accomplished. Oxidation of these alkyl derivatives with nitric yielded the corresponding alkylphosphonic acids. From this, the author concludes that the halogen-containing forms of (I) are polymers of phosphorus in which the halogen atoms occupy a terminal position. (RZhKhim, No 3, 1955)

SO: Sum-No 945, 7 Mar 56

KRAFT, M. Ya. and FARINI, V. P.

Concerning the Nature of Some Modifications of Red Phosphorus. III.
Polymerization of Yellow Phosphorus in Tertiary Phosphines. page 729.
Sbornik statey po obshchey khimii (Collection of Papers on General
Chemistry), Vol 1, Moscow-Leningrad, 1953, pages 762-766.

All-Union Sci Res [Chemico-Pharmaceutical] Inst imeni S. Ordzonikidze

KRAFT, M. Y.

U.S.S.R.

✓ Polymeric arseno compounds. II. Preparation of various polymer homologs of Salvarsan by electrolytic reduction of 3-amino-4-hydroxyphenylarsonic acid. M. Ya. Kraft, O. I. Kargin, and A. S. Mironov (S. Odessa Univ. Ass. Univ. Chem. Pharm. Inst., Moscow). *Sbornik State Obshch. Khim.* 3: 1354-9 (1953); cf. C.A. 45: 2899d. By regulation of H overvoltage on the cathode it is possible to obtain HO(AaR).OH [R = 3,4-H₂N(HO)C₆H₃] by reduction of 3-amino-4-hydroxyphenylarsonic acid. It is possible that the higher polymers are also products of somewhat greater degree of reduction. The phenomena of viscosity in Salvarsan homologs are very complex since there is no parallelity between the viscosity and the hydro constant of a given specimen. The reductions were run in a divided cell (porcelain cup) with Pb cathode and Pb anode in 3N H₂SO₄ electrolyte (with some KI added) and 3N H₂SO₄ anolyte; the reaction was run at 60-65° with c.d. 1-0 amp. per sq. decim. The products obtained at the different c.d. values are characterized by the following number of repeating units: at 1 amp. 7.3, at 2 amp. 10.0, at 4 amp. 13.4, at 8 amp. 14.5. Relative viscosities of various polymer homologs of Salvarsan by reduction of 3-nitro(or amino)-4-hydroxyphenylarsonic acid by sodium hydrosulfite. M. Ya.

OVER

7. *Yan. Kras. 11*

Kraft, O. P., Al'bitskaya, and A. S. Mironova. *Ibid.* 1301-6. To 40 g. NaCl and 50 g. cryst. Na_2CO_3 in 2 l. H_2O at 2° was added 516 g. 25% $\text{Na}_2\text{S}_2\text{O}_4$, followed immediately by 30 g. 3-amino-4-hydroxyphenylarsonic acid (I), in 114 ml. 2N NaOH; at $+15^\circ$ the mixt. was heated to 60° for 1 hr. and the ppt. of Solvarsan is filtered off, dissolved in aq. NaOH, clarified with C and acidified, yielding 73.7% Solvarsan sulfate, containing 20% As. This dissolved in aq. NaOH, clarified with C and treated with Na plumbate, filtered, and acidified with HCl gave Solvarsan HCl salt, which after washing and vacuum drying contained 31.39% As; iodine no. 0.16; the no. of repeating units in the polymer was 6.9 (av.). Reduction of 3-amino-4-hydroxyphenylarsonic acid (46.6 g.) with double amt. of hydrosulfite (161 g. 86%) gave 60.2% Solvarsan sulfate containing 20% As; this had 21 repeating units, as shown by iodine titration. A four-fold amount of hydrosulfite gave a similar product with 26 repeating units; a 9-fold excess of hydrosulfite gave a product with 10.2 repeating units. The Solvarsans from nitro acid show lesser iodine constant (degree of polymerization) than the products obtained by reduction of the amino acid. It is believed that toxicity of Solvarsan is a function of its degree of polymerization; the larger molecules are less toxic since the relative proportion of phenolic groups is smaller. Reduction of 23.3 g. 3-amino-4-hydroxyphenylarsonic acid with a soln. prepd. from 100 g. Ca hypophosphite and 200 ml. HCl in 700 ml. H_2O in the presence of a little KI gave 64% Solvarsan HCl salt contg. 29.14% As and having the number of repeating unit, 24.8; another similar run gave a product with 33 repeating units. Reduction with $\text{Na}_2\text{S}_2\text{O}_4$ in the presence of NaHSO_3 leads to lower yields of Solvarsan.

G. M. Kozlovskii

KRAFT, M. YA.; AL'BITSKAYA, O. P.; and MOROZOVA, A. S.

Polymeric Arsenic Compounds. III. Preparation of Various Polymer Homologues of Salvarsan by Reduction of 3-Nitro (or Amino) -4- Hydroxyphenyl Arsenic Acid with Sodium Hydrosulfite, page 1360, Sbornik statey po obshchey khimii (Collection of Papers on General Chemistry), Vol II, Moscow-Leningrad, 1953, pages 1680-1686.

All-Union Sci Res Chemico-Pharmaceutical Inst imeni S. O. Zhukovskogo

KRAFT, M. YA.

USSR/Chemistry - Oxidation

Card 1/1 Pub. 22 - 24/47

Authors : Kraft, M. Ya., and Katyshekina, V. V.

Title : Oxidation of salvarsan and novarsenol with elementary oxygen

Periodical : Dok. AN SSSR 99/1, 89-92, Nov 1, 1954

Abstract : The oxidation reactions of salvarsan and novarsenol, which is a product of the reaction between salvarsan and rongalite (formaldehyde addition product), is described. It was established that As in the novarsenol serves as an oxygen carrier and that novarsenol is capable of catalyzing such substances which are capable of reducing arsenoxide type compounds. The toxicity of novarsenol, when exposed to air, is discussed. Ways of protecting novarsenol against the effects of air are listed. Six references: 5-German and 1-USSR (1910-1949). Table; graph.

Institution : The S. Ordzhonikidze All-Union Scientific Research Chem-Pharmaceutical Institute

Presented by: Academician A. N. Nesmeyanov, June 11, 1954

USSR/Chemistry - Synthesis

Card 1/1 Pub. 22 - 19/40

Authors : Kraft, M. Ya.; Agracheva, E. B.; and Sytina, E. N.

Title : ~~Salvarsan polymer homologues~~
: New method for the synthesis of polymer homologues of salvarsan

Periodical : Dok. AN SSSR 99/2, 259-260, Nov 11, 1954

Abstract : A new method for the derivation of salvarsan polymer homologues from the reduction of 3-amino-4-hydroxyphenylarsinic acid with zinc powder, is introduced. The value of the iodine constant indicated that this new method of reduction offers high-molecular salvarsan of approximately the same quality as is usually obtained when hypophosphorous acid is used as a reducing agent. The iodine constant of salvarsan cannot be reduced by using small amounts of zinc powder, the salvarsan yield is reduced but the iodine constant remains unchanged. Methods of synthesizing less polymerized salvarsanes are shown. Six references 3-German; 2-USA and 1-USSR (1912-1949).

Institution : The S. Ordzhonikidze All-Union Scientific Research Chemical-Pharmaceutical Institute

Presented by: Academician A. N. Nesmeyanov, June 11, 1954

KRAFT, M. YA.
USSR/ Chemistry - Pharmaceuticals
Card 1/1 Pub. 22 - 22/52
Authors : Kraft, M. Ya., and Agracheva, E. B.
Title : ~~XXXXXXXXXX~~
The structure of salvarsan and its molecular weight
Periodical : Dok. AN SSSR 100/2, 279-282, Jan 11, 1955
Abstract : Data are presented regarding the chemical structure and molecular weight of salvarsan (drug for protozoan infections). It was found that the viscosity of a salvarsan solution depends upon the magnitude of the molecular weight and not upon the causes connected with the control of the solution. The molecular weight of salvarsan was determined by studying the hydrolysis of high molecular salvarsan in the presence of HCl. Six references: 1 USA; 1 French; 1 German and 3 USSR (1920-1954). Tables.
Institution : The S. Ordzhonikidze All Union Scientific Research Chemical- Pharmaceutical Institute
Presented by : Academician A. N. Nesmeyanov, June 16, 1954

Ka₂SO₄·K₂CO₃·H₂O

The following data are for the compound Ka₂SO₄·K₂CO₃·H₂O. The data are given in the form of a table. The first column gives the name of the compound, the second column gives the molecular weight, the third column gives the density, the fourth column gives the melting point, the fifth column gives the boiling point, the sixth column gives the refractive index, the seventh column gives the refractive index, the eighth column gives the refractive index, the ninth column gives the refractive index, the tenth column gives the refractive index, the eleventh column gives the refractive index, the twelfth column gives the refractive index, the thirteenth column gives the refractive index, the fourteenth column gives the refractive index, the fifteenth column gives the refractive index, the sixteenth column gives the refractive index, the seventeenth column gives the refractive index, the eighteenth column gives the refractive index, the nineteenth column gives the refractive index, the twentieth column gives the refractive index, the twenty-first column gives the refractive index, the twenty-second column gives the refractive index, the twenty-third column gives the refractive index, the twenty-fourth column gives the refractive index, the twenty-fifth column gives the refractive index, the twenty-sixth column gives the refractive index, the twenty-seventh column gives the refractive index, the twenty-eighth column gives the refractive index, the twenty-ninth column gives the refractive index, the thirtieth column gives the refractive index, the thirty-first column gives the refractive index, the thirty-second column gives the refractive index, the thirty-third column gives the refractive index, the thirty-fourth column gives the refractive index, the thirty-fifth column gives the refractive index, the thirty-sixth column gives the refractive index, the thirty-seventh column gives the refractive index, the thirty-eighth column gives the refractive index, the thirty-ninth column gives the refractive index, the fortieth column gives the refractive index, the forty-first column gives the refractive index, the forty-second column gives the refractive index, the forty-third column gives the refractive index, the forty-fourth column gives the refractive index, the forty-fifth column gives the refractive index, the forty-sixth column gives the refractive index, the forty-seventh column gives the refractive index, the forty-eighth column gives the refractive index, the forty-ninth column gives the refractive index, the fiftieth column gives the refractive index, the fifty-first column gives the refractive index, the fifty-second column gives the refractive index, the fifty-third column gives the refractive index, the fifty-fourth column gives the refractive index, the fifty-fifth column gives the refractive index, the fifty-sixth column gives the refractive index, the fifty-seventh column gives the refractive index, the fifty-eighth column gives the refractive index, the fifty-ninth column gives the refractive index, the sixtieth column gives 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refractive index, the ninety-ninth column gives the refractive index, the one hundredth column gives the refractive index.

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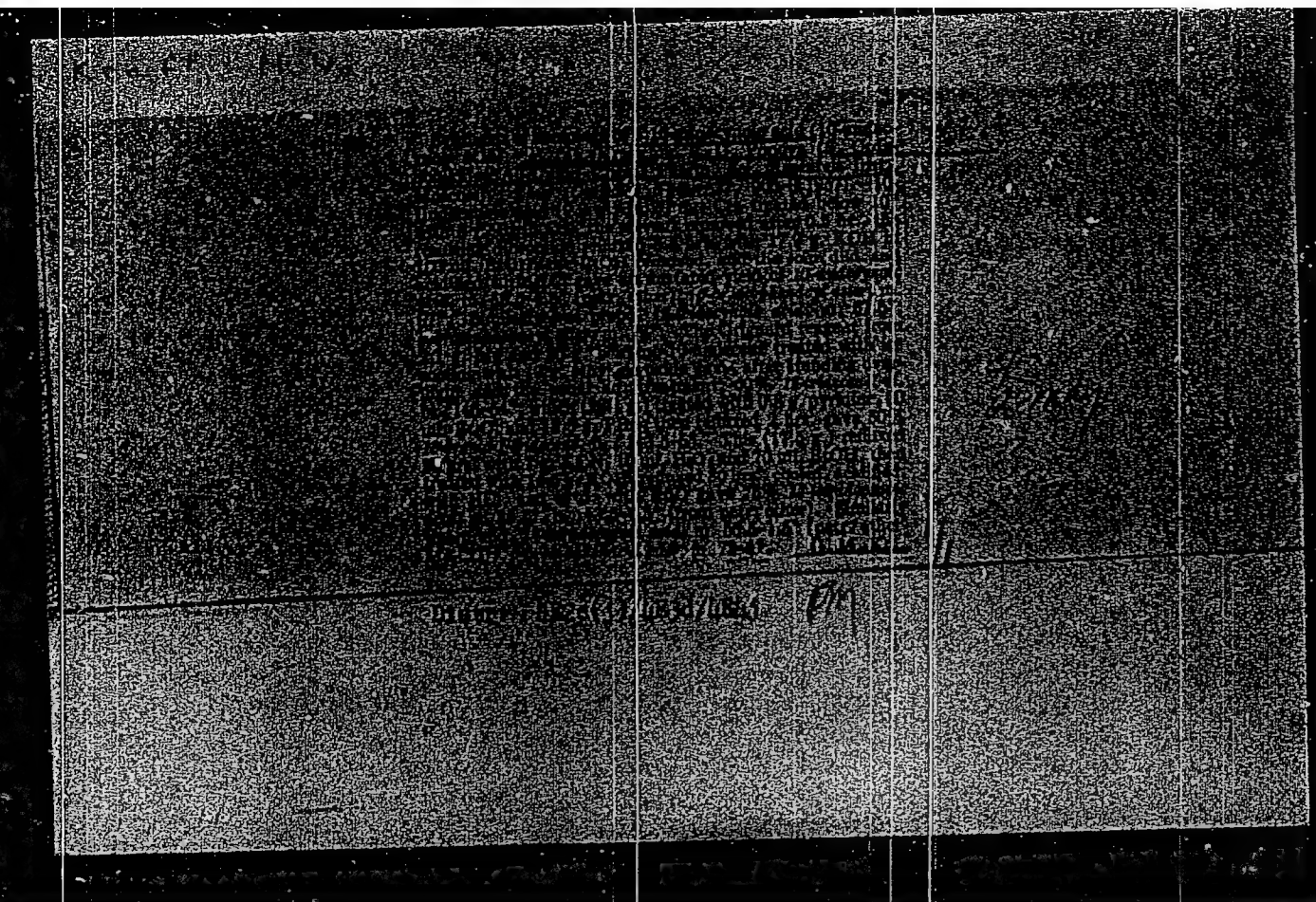
KRAFT, M Ya.; KATYSHKINA, V.V.

Reactions in carboxylic acid - thionyl chloride systems. New type of cationic catalysis. Dokl. AN SSSR 109 no.2:312-314 J1 '56.
(MLRA 9:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S.Ordashonikidze. Predstavleno akademikom A.N. Nesmeyanovym.
(Acids, Fatty) (Thionyl chloride)

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CIA-RDP86-00513R000826010010-3"

AUTHORS: Kraft., M. Ya., and Sytina, Ye. N.

20-1-24/44

TITLE: On the Nature of the Spontaneous Variation of Viscosity in Salvarsan Solutions (O prirode samoproizvol'nogo izmeneniya vyazkosti rastvorov sal'varsana).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 1, pp. 89-92 (USSR).

ABSTRACT: The high viscosity of salvarsan solutions in water is already known since the first synthesis of this compound and was studied by further authors. It depends on several factors: 1) on the temperature at which the solution is produced, 2) on the time during which it is left standing, and 3) on the temperature at which the measurement is taken. A strong polymerization and hydration was supposed to exist in these solutions. The variations of viscosity proved to be reversible. The viscosity is to a high degree dependent on the method of production of salvarsan: when it is produced according to Kober, it always yields much more viscous solutions. The works in the laboratory of the author (under "A" below) proved that salvarsan is a polymeric compound. The spontaneous variation of the viscosity of its solutions depends, according to the authors, on the fact that in the solution, according to concentration, acidity, temperature etc., reactions may take place in which, due to dehydration, the chain-ex-

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Salvarsan Solutions.

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tension of the chief valencies may take place. It is quite natural that the viscosity can under certain conditions increase by dehydration, whereas under other conditions, on the contrary, a hydrolytic splitting of the "As-O-As" bonds takes place and the viscosity thereby decreases. In order to verify this assumption it had to be proved that in a salvarsan solution which became more viscous with increasing time a polymer with a high molecular weight developed, i. e. another compound. As the salvarsan molecule is very unstable, the authors chose its isolation in form of the sulfate in a CO₂-atmosphere.

The production method is described. The resulting salvarsan basis was transformed in chlorohydrate according to Ehrlich and then according to Kober. Salvarsan according to Ehrlich & Bertheim contained 29,8% As. The duration of outflow of a 0,4 % solution (in the viscosimeter by Ostwald) at 27°C was 0 minutes 43 seconds, molecular weight = 7200. After 3 days standing in CO₂ it was found that the

viscosity of the 1% -sulfate solution hardly differs from that of chlorohydrate which stood 3 days and that it is much higher than the viscosity of the initial solution. The test results describes convincingly indicate that the spontaneous variations of viscosity of the

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salvarsan solution: 1) are subject to certain laws, 2) another time prove that the viscosity of the salvarsan solutions does not depend on a formation of associates but on the fact that salvarsan is an actually high-molecular compound. Its structure is illustrated by equation (1). In aqueous solutions the molecular weight may decrease or increase. This takes place in dependence on pH, temperature and concentration, namely an increase by dehydration (separation of H_2O from the terminal groups of the molecule), or a decrease due to a hydrolytic splitting of the "As-O-As" bonds. It is very well possible that most of the "arseno compounds" described in publications in reality are analogous polymers. (Excepted are the crystalline ones. arsenobenzene, arsenotoluol and some others). Such "arseno compounds" were described in a very great number and all have no practical importance. An exception is represented by neosalvarsan whose structure the authors will attempt to clear up in the future. There are 15 references, 8 of which are Slavic.

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On the Nature of the Spontaneous Variation of Viscosity in 20-1-24/44
Salvarsan Solutions.

ASSOCIATION: Allunion Scientific Chemical-Pharmaceutical Research Institute
 imeni S. Ordzhonikidze (Vsesoyuznyy nauchno-issledovatel'skiy-
 khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze).

PRESENTED: By A. N. Nesmeyanov, Academician, April 20, 1957

SUBMITTED: April 16, 1957.

AVAILABLE: Library of Congress.

Card 4/4

AUTHORS: Kraft, M. Yu., Katyskhina, V. V. SOV/79-29-1-14/74

TITLE: A New Type of Cation Catalysis (Novyy tip kationnogo kataliza)
 II. The Reaction of Carboxylic Acids With Phosphorus Tri-
 chloride (II. Reaktsiya karbonsykh kislot s trekhkhlorigidom
 fosforom)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 59-63 (USSR)

ABSTRACT: The authors have previously shown that neutral salts (NaCl, KCl and others) may act as very active catalysts in several organic reactions. They discovered this property in connection with the reaction of phenols with POCl_3 (Refs 1, 2). POCl_3 reacts easily and promptly in the presence of neutral salts, even with those phenols that are otherwise not reactive (nitro-phenols, picric acid). The dependence of reaction acceleration on the constant of dissociation of phenol led to the assumption that the mechanism of the catalytic effect of the neutral salts is due to the transfer of the cation:

$$\text{ArO}^-\text{H}^+ + \text{Na}^+\text{Cl}^- \rightleftharpoons \text{ArONa} + \text{HCl} \quad (1)$$

$$\text{ArONa} + \text{POCl}_3 \rightarrow \text{ArOPOCl}_2 + \text{NaCl}.$$

Card 1/3 It was assumed that this catalytic activity of the neutral

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salts might also occur in several other reactions. In fact, its effect was also found in the reaction of carboxylic acids with thionyl chloride (Ref 3). It was a quite natural thing to substitute the latter by PCl_3 . Although this substitution had already been known for a long time (Ref 6) (e. g. in the case of the synthesis of chloric acid anhydrides of carboxylic acid) no details have hitherto been published concerning the mechanism. Anyway, the different processes (4) (5) (6) (7) of this reaction show that no details have hitherto been known about it. Also in this case the reaction acceleration depends to a great extent upon the dissociation constant of the acid. It is highest in the case of strong acids. If trichloroacetic acid is used the constant of reaction speed grows e. g. by the fourteen fold, in the case of monochloroacetic acid it grows only by the four fold. The authors are of the opinion that the possibility of a catalytic acceleration of the above reaction by means of neutral salts may be best explained by the reaction process (6) according to Lucas, Pressman (Ref 7). Kinetics of the reaction of carboxylic acids with PCl_3 is shown

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in the figure. There are 1 figure and 10 references, 3 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze (All-Union Chemo-Pharmaceutical Scientific Research Institute imeni S. Ordzhonikidze)

SUBMITTED: May 14, 1958

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AUTHORS: Katyshkina, V. V., Kraft, M. Ya. 30V/72-29-1-15/74

TITLE: A New type of Cation Catalysis (Novyy tip kationnogo kataliza)
 III. Reactions of Chloric Acid Anhydrides of Carboxylic
 Acids With Acids and Phenols (III. Reaktsii khlorangidridov
 karbonevykh kislot s kislotalami i fenolami)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 63-68 (USSR)

ABSTRACT: Basing on previous papers (Refs 1-4) on the catalytic role
 of neutral salts in several organic reactions, two reactions
 are described in the present case.

$$\text{RCOOH} + \text{RCOCl} \rightarrow (\text{RCO})_2\text{O} + \text{HCl}$$

$$\text{ArOH} + \text{RCOCl} \rightarrow \text{ArOCOR} + \text{HCl}$$
 Both reactions correspond to the conditions under which a
 catalytic activity of neutral salts may proceed (Ref 1); one
 component of acid character can thus participate in the
 transference of the cation and the other possesses a mobile
 halogen atom. The first reaction does not only make possible
 a further field of application of the new type of cation
 catalysis discovered by the authors but also offers a method
 for the synthesis of acid anhydrides. The catalytic effect of
 neutral salts in reactions of carboxylic acids with chloric

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of Carboxylic Acids With Acids and Phenols

acid anhydrides was investigated in many cases. As in earlier cases (Refs 1, 2), the reaction kinetics was judged according to the speed of precipitation of HCl. Figure 1 gives the results. Thus, it can be seen that the greatest reaction acceleration takes place in trichloroacetic acid in the case of an addition of KCl. Without a catalyst, however, it is reduced by its six fold. This is a confirmation of the already earlier found regularity (Refs 1-4) also in the reaction of carboxylic acid with its chloric acid anhydrides. Also in the latter case the catalytic activity of the neutral salts depends highly upon the dissociation constant of one of the components. The experiments gave high yields in acid anhydrides (especially with a great excess of acid chloride) so that this reaction can be recommended as a preparative method of synthesis. The use of the cation catalysis in alkylation reaction of phenols was investigated in the case of reaction of 2,4-dinitro-phenol with the chloric acid anhydrides of chloroacetic- and butyric acid. Figure two gives the results. As this reaction acceleration with neutral salts depends upon the dielectric

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constants of the chloric acid anhydride of carboxylic acid an
ion mechanism of catalytic activity is thus implied and the
above mentioned regularity is confirmed.
There are 2 figures, 1 table, and 11 references, 8 of which
are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevti-
cheskiy institut imeni S. Ordzhonikidze (All-Union Scientific
~~Chemo~~-Pharmaceutical Research Institute imeni S. Ordzhonikidze)

SUBMITTED: May 14, 1958

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5(3)

AUTHORS: Popova, Ye. G., Shevyakova, L. A., Kraft, M. Ya. SOV/79-29-6-40/72

TITLE: Synthesis of Some Derivatives of the Alkdiin Carboxylic Acids on the Basis of Diacetylene (Sintez nekotorykh proizvodnykh alkdiin-karbonovykh kislot na osnove diatsetilena)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 1953 - 1956 (USSR)

ABSTRACT: In the present paper the derivatives of the acids are described, the carboxyl group of which is situated in the conjugated triple bonds. Their structure is of interest because similar groupings occur as structural elements of the molecules of some polyacetylene antibiotics e.g. of "agrocibin" and other products (Ref 1). For the synthesis of the diene compounds the authors used the little investigated condensation of diacetylene with alkyl halides (Refs 2-5) which is of interest for the investigation of the synthesis of some diacetylene compounds. The 1,4-dichloro butyne with the action of sodium amide in liquid ammonia was converted into diacetylene which because of its unstable behavior and of its explodability was not separated and was therefore condensed in the form of its sodium derivative with the corresponding alkyl

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